

NAME P/N QTY	CRIT	FAILURE MODE & CAUSES	FAILURE EFFECT	RATIONALE FOR ACCEPTANCE
COMMON MULTIPLE CONNECTOR, ITEM 410 ----- SV778872-24 (1)	2/2	410FM06B External leakage, coupled, water supply. Failure, coupling O- seal bypass leakage, defective interfacing Dynatube line or line fitting leakage.	END ITEM: Water leakage to ambient. Unable to charge PLSS water reservoir. GFE INTERFACE: Depletion of vehicle/station water supply. MISSION: Unable to use EMU during airlock activity. CREW/VEHICLE: None. TIME TO EFFECT /ACTIONS: Minutes. TIME AVAILABLE: N/A TIME REQUIRED: N/A REDUNDANCY SCREENS: A-N/A B-N/A C-N/A	A. Design - In the coupled condition there are four external leakage paths. Two of these involve single static radial O-seals. The third leakage path consists of three radial O-seals which slide axially along sealing surfaces during coupling and uncoupling. Two of these seals must leak before an external leak path develops. The O-seal design configuration dimensions and rigidity/geometry of assembly provide squeeze under all loading conditions. The fourth leakage path consists of a dynatube fitting between the SCU/IEU common connector potable water elbow and the flex hose. Surface finish and configuration are controlled to prevent leakage. B. Test - Component Acceptance: Air-Lock, Inc. ATP 9902-03 requires that at a cooling water inlet pressure of 30 psig (IEU) / 22.5 + 0.5 psig (SCU) leakage shall not exceed 0.15 scc/hr. At a cooling water outlet pressure of 30 psig (IEU) / 22.5 + 0.5 psig (SCU), leakage shall not exceed 0.15 scc/hr. IPT: An in-process testing performs at HS following the oxygen compatibility cycling test. No leakage is allowed when the water circuit is pressurized. PDA: An external leakage test is performed per EMU1-21-022 (IEU) / SEMU-60005 (SCU). With the multiple connector mated, the potable water line is pressurized with water at 17.0 psig (IEU) / 38.5 - 41.5 psig (SCU). No visible water leakage is permissible in a 60-minute period. Certification: Certified for a useful life of 15 years. C. Inspection - The "O" seals and metal sealing surfaces are 100 percent inspected by Air-Lock, Inc. for surface characteristics. D. Failure History - None. E. Ground Turnaround - IEU: None. SCU: Tested per FEMU-R-001, V1103.02 EMU checkout in Orbiter. F. Operational Use - Crew Response - Pre/Post EVA: Troubleshoot problem. If no success, discontinue use of umbilical. Operate EMU on battery power. Consider sharing other umbilical for cooling , O2 , and charging if battery constraints permit. Consider in-suit battery swap using spare battery(s). Special Training - Standard EMU training covers this failure mode. Operational Considerations - At least one spare EMU battery is manifested for each flight. Generic EVA Checklist, JSC-48023, procedures Section 3 (EMU Checkout) and 4 (EVA prep) verify hardware integrity and systems operational

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		410FM06B		status prior to EVA. Real Time Data System allows ground monitoring of EMU systems.

EXTRAVEHICULAR MOBILITY UNIT
SYSTEMS SAFETY REVIEW PANEL REVIEW
FOR THE
I-410 SCU COMMON MULTIPLE CONNECTOR
CRITICAL ITEM LIST (CIL)

EMU CONTRACT NO. NAS 9-97150

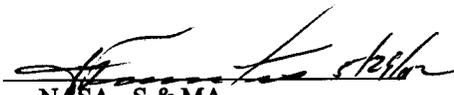
Prepared by: 
HS - Project Engineering

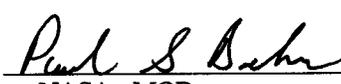
Approved by:  5/21/02
NASA - SSA/SSM
LSS


HS - Reliability

 5/21/02
NASA - EMU/SSM

 4/24/02
HS - Engineering Manager

 5/21/02
NASA - S & MA

 5-30-02
NASA - MOD

 6/6/02
NASA - Crew

 6/13/02
NASA - Program Manager